

A. A. County Potential LID - Site 48

DEFENSE HIGHWAY (M450)

BALDWIN AVENUE

ELECTRIC AVENUE

48

IMP 1a

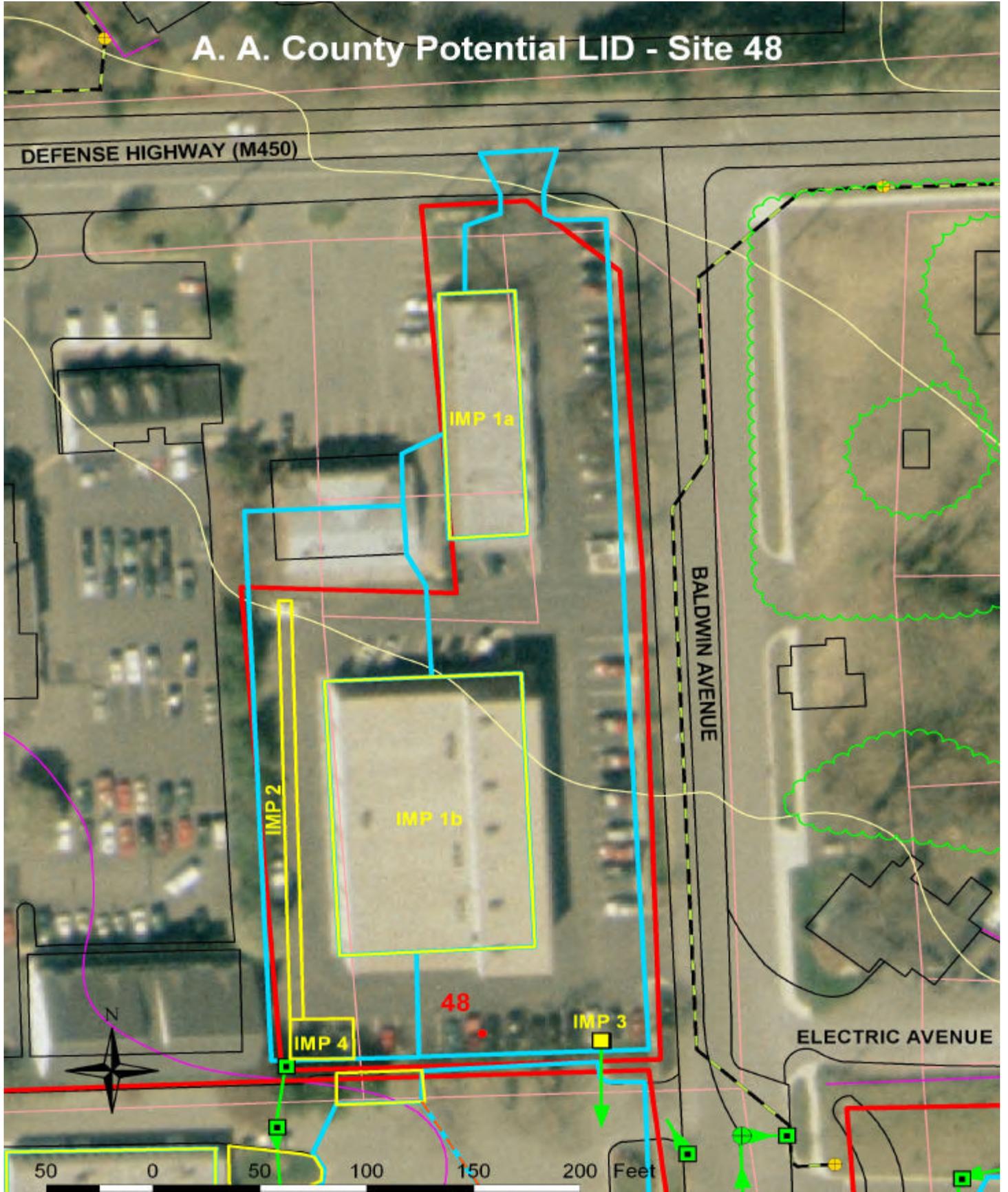
IMP 1b

IMP 2

IMP 4

IMP 3

50 0 50 100 150 200 Feet



**UPPER PATUXENT RIVER WATERSHED RESTORATION ACTION STRATEGY (WRAS)
FORM 1 -- Catchment Information**

Subwatershed: Unnamed Tributary

Location of Catchment Centroid on ADC Map: Year: 2000 Page: 17 Grid: J7

State Plane Coordinates of Outfall Location: X: 1398747 Y: 482359

Closest Road Intersection to Outfall: Defense Highway and Baldwin Avenue

Outfall SDI ID or Outfall Description: unknown

Objective: Demonstration / Impairment(s) (Sheet 1) _____

Drainage Area (ac): 1.5 Impervious Area (ac): 1.4

Percent Impervious: 93% Soil Recharge Factor (S): 0.38

WQ_v (required): 0.11 Re_v (required): 0.04

Predominant Land Use: commercial Mean Depth to Ground Water: unknown

Sanitary System: Septic Municipal Sewer Water Supply: On Site Well Public Water

Storm Drainage System Within Catchment

Piped: 100% Open Channels: 0%

Area Drained by System: 100%

Location in Catchment: Headwaters Middle Lower All

Open Channel Lining- Vegetation: 0% Riprap: 0% Concrete: 0% Other: 0%

Existing IMP(s) / BMP(s)

SDI ID: _____ Type (number from Sheets 4 & 5): _____ Age: _____

Closest Road Intersection to IMP / BMP: _____

Catchment Area Treated (ac) : _____ Percentage Catchment Treated: _____

WQ_v Provided: YES NO Re_v Provided: YES NO C_p Provided: YES NO

SDI ID: _____ Type (number from Sheets 4 & 5): _____ Age: _____

Closest Road Intersection to IMP / BMP: _____

Catchment Area Treated (ac) : _____ Percentage Catchment Treated: _____

WQ_v Provided: YES NO Re_v Provided: YES NO C_p Provided: YES NO

SDI ID: _____ Type (number from Sheets 4 & 5): _____ Age: _____

Closest Road Intersection to IMP / BMP: _____

Catchment Area Treated (ac) : _____ Percentage Catchment Treated: _____

WQ_v Provided: YES NO Re_v Provided: YES NO C_p Provided: YES NO

**UPPER PATUXENT RIVER WATERSHED RESTORATION ACTION STRATEGY (WRAS)
FORM 1 -- Catchment Information (concluded)**

CATCHMENT SUMMARY			
WQ _v (provided):	<u>0.075</u>	Re _v (provided) :	<u>0.022</u>
Area Treated (ac):	<u>1.47</u>	Impervious Area Treated (ac):	<u>1.33</u>
Area Treated (%):	<u>98%</u>	Impervious Area Treated (%):	<u>95%</u>

Comments

**UPPER PATUXENT RIVER WATERSHED RESTORATION ACTION STRATEGY (WRAS)
FORM 2 -- Site Information**

Site Name: _____ Address: 2101 Defense Hwy & 2111 Baldwin Ave

Site Owner: _____

State Plane Coordinates of Site Centroid: X: 1398822 Y: 482579 Date: 5/29/03

Personnel: PM Weather: cloudy, rain, 70F deg

Area (ac): 1.4 Impervious Area (ac): 1.3

Percent Impervious: 96% Soil Recharge Factor (S): 0.38

WQ_v (required): 0.1 Re_v (required): 0.04

Property Area (ac): 1.4 Property Area Included in Site: 100%

Amount of Catchment Occupied by Site: 93%

Storm Drainage System Within Site

Piped: 100% Open Channels: 0% Area Drained by System: 100%

Open Channel Lining - Vegetation: _____ Riprap: _____ Concrete: _____ Other: _____

Existing IMP(s) / BMP(s) (Identified on Page 1, FORM 1, Catchment Information)

SDI ID: _____ Condition: Excellent Good Average Fair Poor

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SDI ID: _____ Condition: Excellent Good Average Fair Poor

Site Information

Type of Pavement: Bituminous Concrete Gravel Grid Pavers Other _____

Pavement Condition: Excellent Good Average Fair Poor

Underdrains can be easily directed to existing storm drains or daylighted: YES NO

Gutter/Exterior Downspouts Present: YES NO (see comments)

Roof Connected Directly to Storm Drain: YES NO

Roof Drains onto Impervious Surface: YES NO

Obvious Existing Drainage Problems: Extensive Moderate Average Limited None

Steep Slopes Present: Extensive Moderate Average Limited None

Existing Landscaping: Extensive Moderate Average Limited None

Mature / Specimen Trees: Extensive Moderate Average Limited None

Area Available for Aboveground BMPs: Extensive Moderate Average Limited None

Existing Cover of Potential Aboveground BMP Locations: Grass Landscaped Gravel Other Pervious
 Pavement Other Impervious

**UPPER PATUXENT RIVER WATERSHED RESTORATION ACTION STRATEGY (WRAS)
FORM 2 -- Site Information (concluded)**

Commercial / Institutional

Islands Present: YES NO

Curb Present Around Island: YES NO

Ground Level of Island Relative to Pavement: Above Equal Below

Island Landscaping: Impervious Bare Earth Gravel Grass Mulch Herbaceous Plants Shrubs
 Trees (<2 in. DBH) Trees (2 - 6 in. DBH) Trees (>6 in. DBH)

Trees have sufficient spacing to allow IMPs YES NO

Parking area that can be directed to potential treatment area with little grading: 100%

SITE SUMMARY			
WQ _v (provided) :	<u>0.075</u>	Re _v (provided):	<u>0.022</u>
Area Treated (ac) :	<u>1.47</u>	Impervious Area Treated (ac):	<u>1.33</u>
Area Treated (%) :	<u>100%</u>	Impervious Area Treated (%):	<u>100%</u>

Photographs

No. <u>287</u>	Description: <u>looking north along west side of property</u>
No. <u>288</u>	Description: <u>looking east along south side of property</u>
No. <u>289</u>	Description: <u>looking north along east side of property</u>
No. <u>290</u>	Description: <u>looking west along south side of property</u>
No. <u>291</u>	Description: <u>looking west between buildings</u>
No. <u>292</u>	Description: <u>looking west along north side of property</u>
No. <u>293</u>	Description: <u>looking south along east side of property</u>
No. <u>294</u>	Description: <u>looking east along north side of property</u>
No. <u>295</u>	Description: <u>looking south along west side of 2101</u>
No. <u>296</u>	Description: <u>looking south along west side of 2111</u>

Comments 2101 is drained internally but discharges onto impervious surface.
2111 is drained externally and discharges directly onto impervious surface.
Little opportunity for IMPs because of the topography.

**UPPER PATUXENT RIVER WATERSHED RESTORATION ACTION STRATEGY (WRAS)
FORM 2 -- Site Information**



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**UPPER PATUXENT RIVER WATERSHED RESTORATION ACTION STRATEGY (WRAS)
FORM 2 -- Site Information (concluded)**



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UPPER PATUXENT RIVER WATERSHED RESTORATION ACTION STRATEGY (WRAS) FORM 3 -- Opportunities and Constraints of Potential Management Practice

New LID IMP SWM BMP Retrofit New SWM BMP Type (Sheets 4 & 5): 7

State Plane Coordinates of IMP / BMP Centroid: X: varies Y: varies

Sketch Location of Footprint (with Approximate Dimensions) and Drainage Boundary on Site Map

Identify all Impairments Addressed by Recommendation (Sheet 1): _____

Treatment Area Ownership: Transportation ROW Utility ROW County Other Government Private
 Other _____

Infrastructure / Structures / Buildings Impacted: YES NO

Limited Impact to Adjacent Properties: YES NO

Area Accessible for Construction: YES NO

Area Accessible for Maintenance: YES NO

Limited Permitting Issues: YES NO

Jurisdictional Wetlands Impacted: YES NO

Forest Retention Area Impacted: YES NO

Conservation Easement Impacted: YES NO

Utilities Present: None Natural Gas Electric Telephone Cable Water Sewer Other _____

Utilities Impacted: None Natural Gas Electric Telephone Cable Water Sewer Other _____

Impacted Utilities: Above Gound Underground

Critical Area Impacted: YES NO

Mature / Specimen Trees Impacted: YES NO

Existing Landscaping Impacted: YES NO

Underdrain Needed: YES NO

Underdrains Can Discharge: YES NO

Soils are Suitable: YES NO

Ground Water Table Level Suitable: YES NO

Estimate IMP / BMP drainage area included on site: 0.39 ac 100%

Retrofit of Existing SWM BMP

SDI ID: _____

Add Forebay: YES NO

Modify Outlet Structure: YES NO

Add Aquatic Bench: YES NO

Grade Bottom of Facility: YES NO

Plant Native Vegetation: YES NO

Provide Additional Storage Volume: YES NO

Excavation / Raise the Embankment: YES NO

**UPPER PATUXENT RIVER WATERSHED RESTORATION ACTION STRATEGY (WRAS)
FORM 3 -- Opportunities and Constraints of Potential Management Practice (concluded)**

IMP / BMP SUMMARY	
WQ _v (provided): <u>unknown</u>	Re _v (provided): <u>0.000</u>
Area Treated (ac): <u>0.39</u>	Impervious Area Treated (ac): <u>0.39</u>

Photographs

No. <u>304</u>	Description: <u>2101 building</u>
No. <u>303</u>	Description: <u>2101 drain</u>
No. <u>297</u>	Description: <u>2111 downspouts</u>
No. _____	Description: _____

Comments IMP/BMP Summary shows combined results for 1a and 1b.

Locations of IMPs:

1a: X=1398837, Y=482691

1b: X=1398812, Y=482488

IMP size = 17,243 sq ft

**UPPER PATUXENT RIVER WATERSHED RESTORATION ACTION STRATEGY (WRAS)
FORM 3 -- Opportunities and Constraints of Potential Management Practice**



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UPPER PATUXENT RIVER WATERSHED RESTORATION ACTION STRATEGY (WRAS) FORM 3 -- Opportunities and Constraints of Potential Management Practice

New LID IMP SWM BMP Retrofit New SWM BMP Type (Sheets 4 & 5): 40

State Plane Coordinates of IMP / BMP Centroid: X: 1398747 Y: 482490

Sketch Location of Footprint (with Approximate Dimensions) and Drainage Boundary on Site Map

Identify all Impairments Addressed by Recommendation (Sheet 1): _____

Treatment Area Ownership: Transportation ROW Utility ROW County Other Government Private
 Other _____

Infrastructure / Structures / Buildings Impacted: YES NO

Limited Impact to Adjacent Properties: YES NO

Area Accessible for Construction: YES NO

Area Accessible for Maintenance: YES NO

Limited Permitting Issues: YES NO

Jurisdictional Wetlands Impacted: YES NO

Forest Retention Area Impacted: YES NO

Conservation Easement Impacted: YES NO

Utilities Present: None Natural Gas Electric Telephone Cable Water Sewer Other _____

Utilities Impacted: None Natural Gas Electric Telephone Cable Water Sewer Other _____

Impacted Utilities: Above Gound Underground

Critical Area Impacted: YES NO

Mature / Specimen Trees Impacted: YES NO

Existing Landscaping Impacted: YES NO

Underdrain Needed: YES NO

Underdrains Can Discharge: YES NO

Soils are Suitable: YES NO

Ground Water Table Level Suitable: YES NO

Estimate IMP / BMP drainage area included on site: 0.35 ac 95%

Retrofit of Existing SWM BMP

SDI ID: _____

Add Forebay: YES NO

Modify Outlet Structure: YES NO

Add Aquatic Bench: YES NO

Grade Bottom of Facility: YES NO

Plant Native Vegetation: YES NO

Provide Additional Storage Volume: YES NO

Excavation / Raise the Embankment: YES NO

**UPPER PATUXENT RIVER WATERSHED RESTORATION ACTION STRATEGY (WRAS)
FORM 3 -- Opportunities and Constraints of Potential Management Practice (concluded)**

IMP / BMP SUMMARY			
WQ _v (provided):	<u>0.015</u>	Re _v (provided):	<u>0.015</u>
Area Treated (ac):	<u>0.28</u>	Impervious Area Treated (ac):	<u>0.18</u>

Photographs

No. <u>298</u>	Description: <u>looking north</u>
No. <u>302</u>	Description: <u>looking south</u>
No. _____	Description: _____

Comments Bioretention will have a width of 6 feet.
Bioretention provides 79% treatment of drainage area as sized.
IMP size = 1,306 sq ft

**UPPER PATUXENT RIVER WATERSHED RESTORATION ACTION STRATEGY (WRAS)
FORM 3 -- Opportunities and Constraints of Potential Management Practice**



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UPPER PATUXENT RIVER WATERSHED RESTORATION ACTION STRATEGY (WRAS) FORM 3 -- Opportunities and Constraints of Potential Management Practice

New LID IMP SWM BMP Retrofit New SWM BMP Type (Sheets 4 & 5): 41

State Plane Coordinates of IMP / BMP Centroid: X: 1398892 Y: 482373

Sketch Location of Footprint (with Approximate Dimensions) and Drainage Boundary on Site Map

Identify all Impairments Addressed by Recommendation (Sheet 1): _____

Treatment Area Ownership: Transportation ROW Utility ROW County Other Government Private
 Other _____

Infrastructure / Structures / Buildings Impacted: YES NO

Limited Impact to Adjacent Properties: YES NO

Area Accessible for Construction: YES NO

Area Accessible for Maintenance: YES NO

Limited Permitting Issues: YES NO

Jurisdictional Wetlands Impacted: YES NO

Forest Retention Area Impacted: YES NO

Conservation Easement Impacted: YES NO

Utilities Present: None Natural Gas Electric Telephone Cable Water Sewer Other _____

Utilities Impacted: None Natural Gas Electric Telephone Cable Water Sewer Other _____

Impacted Utilities: Above Gound Underground

Critical Area Impacted: YES NO

Mature / Specimen Trees Impacted: YES NO

Existing Landscaping Impacted: YES NO

Underdrain Needed: YES NO

Underdrains Can Discharge: YES NO

Soils are Suitable: YES NO

Ground Water Table Level Suitable: YES NO

Estimate IMP / BMP drainage area included on site: 0.67 ac 95%

Retrofit of Existing SWM BMP

SDI ID: _____

Add Forebay: YES NO

Modify Outlet Structure: YES NO

Add Aquatic Bench: YES NO

Grade Bottom of Facility: YES NO

Plant Native Vegetation: YES NO

Provide Additional Storage Volume: YES NO

Excavation / Raise the Embankment: YES NO

**UPPER PATUXENT RIVER WATERSHED RESTORATION ACTION STRATEGY (WRAS)
FORM 3 -- Opportunities and Constraints of Potential Management Practice (concluded)**

IMP / BMP SUMMARY			
WQ _v (provided):	<u>0.053</u>	Re _v (provided):	<u>0.000</u>
Area Treated (ac):	<u>0.67</u>	Impervious Area Treated (ac):	<u>0.67</u>

Photographs

No. <u>305</u>	Description: <u>looking south</u>
No. <u>306</u>	Description: <u>looking west</u>
No. <u>307</u>	Description: <u>looking north</u>
No. <u>308</u>	Description: <u>looking east</u>
No. _____	Description: _____

Comments IMP/BMP Summary assumes 100% treatment of drainage area using Filterra (to be sized).

**UPPER PATUXENT RIVER WATERSHED RESTORATION ACTION STRATEGY (WRAS)
FORM 3 -- Opportunities and Constraints of Potential Management Practice**



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UPPER PATUXENT RIVER WATERSHED RESTORATION ACTION STRATEGY (WRAS) FORM 3 -- Opportunities and Constraints of Potential Management Practice

New LID IMP SWM BMP Retrofit New SWM BMP Type (Sheets 4 & 5): 38

State Plane Coordinates of IMP / BMP Centroid: X: 1398762 Y: 482374

Sketch Location of Footprint (with Approximate Dimensions) and Drainage Boundary on Site Map

Identify all Impairments Addressed by Recommendation (Sheet 1): _____

Treatment Area Ownership: Transportation ROW Utility ROW County Other Government Private
 Other _____

Infrastructure / Structures / Buildings Impacted: YES NO

Limited Impact to Adjacent Properties: YES NO

Area Accessible for Construction: YES NO

Area Accessible for Maintenance: YES NO

Limited Permitting Issues: YES NO

Jurisdictional Wetlands Impacted: YES NO

Forest Retention Area Impacted: YES NO

Conservation Easement Impacted: YES NO

Utilities Present: None Natural Gas Electric Telephone Cable Water Sewer Other _____

Utilities Impacted: None Natural Gas Electric Telephone Cable Water Sewer Other _____

Impacted Utilities: Above Gound Underground

Critical Area Impacted: YES NO

Mature / Specimen Trees Impacted: YES NO

Existing Landscaping Impacted: YES NO

Underdrain Needed: YES NO

Underdrains Can Discharge: YES NO

Soils are Suitable: YES NO

Ground Water Table Level Suitable: YES NO

Estimate IMP / BMP drainage area included on site: 0.35 ac 95%

Retrofit of Existing SWM BMP

SDI ID: _____

Add Forebay: YES NO

Modify Outlet Structure: YES NO

Add Aquatic Bench: YES NO

Grade Bottom of Facility: YES NO

Plant Native Vegetation: YES NO

Provide Additional Storage Volume: YES NO

Excavation / Raise the Embankment: YES NO

**UPPER PATUXENT RIVER WATERSHED RESTORATION ACTION STRATEGY (WRAS)
FORM 3 -- Opportunities and Constraints of Potential Management Practice (concluded)**

IMP / BMP SUMMARY			
WQ _v (provided):	<u>0.007</u>	Re _v (provided):	<u>0.007</u>
Area Treated (ac):	<u>0.13</u>	Impervious Area Treated (ac):	<u>0.09</u>

Photographs

No. <u>299</u>	Description: <u>looking north</u>
No. <u>300</u>	Description: <u>looking east</u>
No. <u>301</u>	Description: <u>looking south</u>
No. _____	Description: _____

Comments IMP will take up 3 parking spots.
Bioretention provides 37% treatment of drainage area as sized.
IMP size = 605 sq ft

**UPPER PATUXENT RIVER WATERSHED RESTORATION ACTION STRATEGY (WRAS)
FORM 3 -- Opportunities and Constraints of Potential Management Practice**



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